Introduction

From birth onwards everybody in this world is faced with some problem or the other. There are needs and motives in the life of the individuals which are to be satisfied .For this purpose definite goals or aims are set. In an attempt for their realization and experiences cause of a serious attention and deliberated efforts on the part of man are needed so that the obstacles or cause of interference in the attainment of the objectives may be overcome. For this purpose one has to think reason and proceed systematically by following the scientific steps.

Problem Solving Ability

Problem solving has been defined in several ways. Problem solving is selective in the sense so that selective relevant experiences are recalled for finding the successful solution.

According to Skinner problem solving is a process of overcoming difficulties that appear to interfere with the attainment in spite of interference.

Problem solving is a process of overcoming difficulties that appear to interfere with the attainment of a goal. It is a procedure of making adjustment in spite of interference.

Problem solving is a goal directed activity. In which goal is to remove the obstacles .problem solving occurs when interference must be overcome in the attainment of an objective.

Problem solving is creative in the sense that it results in an essentially new construct and reorganization of ideas or movements or both.

Concept of Academic Motivation

Motivation is an umbrella term having a wide variety of connotations and denotations. Motivation is derived from the word movere which means to motivation in one form or other is always present at the root of all human activities, as human behaviour in one form or the other is guided by motives and drives. It is a process of arousing action, sustaining activity in progress, regulation and directing pattern of activity. The success of the achievement in life depends on motivation.

The educators generally agree that a major variable affecting classroom performance is motivation. But academic motivation is such a concept which has been introduced to explain some of the differences in the school attainment of children with similar measured

abilities. Enstwistle (1968) Academic motivation broadly comes under the achievement motivation.

The achievement motive is a complex human motive, which is acquired through the process of specialization and is one of a multitude of motive system.

Atkinson and Feather (1966) in their A theory of academic motivation concluded that an achievement oriented person is generally attracted to activities which require the successful experience of skill.

Heckhausen(1967) defined achievement motivation as the striving to increase, or keep as high possible one's own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can therefore either succeed or fail.

Motivation in school situation especially in classroom teaching learning termed as academic motivation. It refers to learner's inclination to be study oriented having positive attitude towards teachers and school as whole.

Moen and Doyle (1978) attempted to define academic motivation as those materials, psychological or school process that draws or implies students to put efforts into curricular activities. Although there is a pronounced lack of consensus about both the conceptual and empirical aspect of academic motivation.

The classroom activities and environment have a direct impact on academic motivation. Positive and supportive activities made available in classroom provide pupils a motive to learn, activates them to achieve in academic spheres, widens their self-concept and perception of the world around them, challenge them to better adjustment. Whereas non educative, negative and hostile activities on the other hand cause and arouse boredom, fatigue, tension, conflict, stress and strain. Such negative aspect in educational process creates confusion and act as a hurdle in motivating pupils.

Pupil's involvement and pupil's satisfaction are other two important elements, which lead to academically motivating the students. The classroom activities involving maximum pupil involvement and which are able to satisfy students thirst for knowledge lead to optimum level of academic motivation. It is very necessary for a teacher to provide students ideal models of learning, which will equip them to learn the values and norms for future.

Pupil's expectation from teachers and teacher's expectation from students also have a positive effect on academic motivation. If teacher are able to come up the role model as is expected by the students, indeed this will enhance academic motivation.

According to Jack Frymoger Academic motivation is one of the many types of human motivation. It relates with pupils academic learning. The pupils are motivated to school in many different ways. They have high or low and positive or negative motivation. The pupil with positive academic motivation try to learn more and they do as they are told. This academic motivation has three basis dimensions these dimension seem to be source of academic motivation of the pupils in school and classroom setting. They are;

1. Internal-External dimension

2. Intake-output dimension

3. Approach-Avoidance dimension.

Concept of Self-Efficacy

Self-efficacy is the most unique human capability, through this form of self-referent thought people evaluate and alter their own thinking and behaviour. These self-evaluations include perceptions of self-efficacy beliefs in ones capabilities to organize and execute the courses of action required to manage conflicting situations. Perceived self efficacy is a significant determinant of performance. Self efficacious individuals consider themselves capable of performing any particular activity. Self-efficacy perceptions are nothing but judgment regarding one's capability to successfully perform specific tasks and behaviours. It involves a generative capability in which one must organize cognitive, social and behaviour skills into integrated courses of action. Self-efficacy refers to the confidence people have in their abilities that they will be successful at given task. Individuals who possess a high degree of self- efficacy are more likely to attempt challenging tasks, to persist longer at them, and to put more effort in the process .If highly efficacious individuals fail, they attribute the outcome to a lack of effort or on adverse environment. When they succeed, they credit their achievement to their abilities. Self -efficacy is the people's belief about their capabilities to produce designated levels of performance that exercise influences over events that affect their lives.

Self-efficacy ultimately determines how an individual behaves, thinks and becomes motivated to be involved with particular roles. It also reflects student's judgment of capability to accomplish specific task.

Personality

Eysenck described extraversion-introversion as the degree to which a person is outgoing and interactive with other people. The behavioural differences are presumed to be the result of interactive with other people. The trait of extraversion- introversion is a central dimension of human personality. The term introversion and extroversion were first popularized by Jung.

Extraversion

Extraversion is the act, state or habit of being predominantly concerned with and obtaining gratification from what is outside the self. Extrovert tend to enjoy human interactions and to be enthusiastic, talk active, assertive, assertive and gregarious. They take pleasure in activities that involve large social gathering, such as parties, community activities, public demonstrations, and business or political groups. Politics, teaching, sales, managing and brokering are fields that favour extroversion. An extrovert person is likely to enjoy time spent with people and find less reward in time spent alone.

Introversion

Introversion is the state of tendency toward being wholly or predominantly concerned with and interested in one's own mental life. Some popular writers have characterized introvert as people whose energy tends to expand through reflection and dwindle during interaction. Introversions often take pleasure in solitary activities such as reading, writing, using computers, hiking and fishing The writer, sculptor, engineer, composer and inventors are all highly introverted. Introvert is likely to enjoy time spent alone and find less reward in time spent with large groups of people, though he or she may enjoy interaction with close friends. They prefer to concentrate on a single activity at a time and like to observe situations before they participate, especially in developing children and adolescents.

Review of Related Literature

Amalaha (1975) found that academic motivation is positively correlated with academic attainment.

Sinha and Sharma(1975) concluded that academic motivation plays an important role in scholastic achievement.

Ghouman (1976) he found that boys or male over achiever scored higher than male under achievers on factors of achievement and differed on personality traits and achievement of the students.

Schunk (1981) showed that efficacy accounted for significant increments of children's achievement gain in mathematics.

Van Gundy (1988) summarized the problem solving process in 5 stages. The first is pre-problem solving which is a process of determining a gap; if a gap remains between what is and what should be, determine a gap and if the problem gap is measurable, think about the available resources, and determine if the problem is in your responsibility. The second is problem definition and analysis which searches for and 39 analyses problem information. The third is generating ideas which search for readymade problem solutions. The fourth is evaluating and selecting ideas which search for information to evaluate the solutions. And the final is implementing the solutions when appropriate by using implementation techniques.

Mehta ,Prabha,Kumar and Dalip (1985) concluded that academic motivation is positively related to study habits.

Pintrich & De Groot,(1990) found that students with high self-efficacy for successful problem solving ability display greater performance monitoring and persist longer than the students with lower self-efficacy.

Dolma (1991) studied the academic motivation among the Tibetan and Indian students on a sample of 150 studying in 1X class of central schools as well as Tibetan managed schools .she found that boys and girls do not differ significantly on academic motivation. School type and sex do not interact significantly in relation to academic motivation of students.

Verma (1990) conducted a study on academic motivation and test anxiety as associated with scholastic achievement of high school students. The result of the study revealed that high achievers have significantly greater motivation as compared to their low achiever counterpart.

Tippins (1991) concluded that self-efficacy, self-regulated learning and test anxiety also were found to be the best performance predictors to find the way to solve the problem,

Bank (1992) suggests six steps to problem solving; 1. Identifying the problem, 2. Identify the cause, 3. Generate Solutions, 4. Choose Solution, 5. Implement Solution, and 6. Evaluate.

Buchanan and Boddy (1992) suggests nine stage model; 1. Identifying the problem, 2. Gather Data, 3. Analyse the data, 4.Generate Solutions, 5. Select Solutions, 6. Planning

implementation, 7. Implement Solution, 8. Evaluate implementation and outcome, and 9. Continue to improve.

Zimmerman & Bandura, (1994) self-efficacy affects achievement directly and indirectly through its influence on goals.

Pajaras and Kranzler (1995) reported that self –efficacy made as strong contribution to the prediction of problem solving as did general mental abilities acknowledged powerful predictor and determinant of academic out come.

Schunk, (1995) self-efficacy, self-regulation, and cognitive strategy use are positively intercorrelated and predict achievement.

Bandura (1997) individuals with high self-efficacy frequently preserve despite difficult tasks or challenging odds and often succeed because perseverance usually results in a successful outcome.

Phillip (2000) found that the personality, intelligence and interests correlate with performance.

Pajares (2000) concluded the students who show higher self-efficacy are more successful with their academic achievement.

Owiti (2001) describes that attitude leads to achievement and abilities are needed for successful performance.

Goswami and Pauen (2005) suggested that the successful solution is up to mapping the relational structure of the base problem to the target problem.

Sanjaiganthi (2005) showed that the problem solving ability of the higher secondary students is low.

Ganandevan (2006) found out that the problem solving ability of higher secondary students is low. The male and female students and the students residing at rural and urban area differ.

Spiridonov (2006) concludes that most psychological research views the solution to solve the problem as a part of transformation of its content.

Janpload (2007) studied the effects of using metacognitive strategies in organizing mathematics activities on mathematical problem solving ability and self-regulation in learning mathematics of eight grade students in Nakhonsrithammarat province, and she found that the

students who learn by using metacognitive strategies had higher problem solving ability and self-regulation in learning than the students who learn by the normal strategy.

Eva (2010) explained that the straightforward way to solve a problem is to remember how the problem was solved in the past.

Kamaruddin and Hazni (2010) recommended that the problem solving ability is very important especially for students. Students can improve their learning ability if the teachers teach them with the implementation of problem solving.

Polawanitch (2011) recommended that there are no best ways to solve the problem but people should understand the problem, the environment of the problem and people who get involved with that problem and eventually make decision.

Need and Significance of the Study

Problem solving is the key to success and has been regarded as the most significant aspect of human behaviour. One of the major aims of education is to develop the ability to attain better performance. No two individuals are alike. There are individual differences in the problem solving ability. Some individuals can handle a situation, but others cannot. A large part of an individual's life is spent in a struggle to find effective solution to his problems. A student having good problem solving ability will be properly adjusted in the class as well as at home. A problem cannot be solved without thinking. The need of problem solving behaviour is to create the power of thinking which helps to find out the solution of the problem. The main objective of problem solving is to go through the physical, psychological, social and environmental factors which hinder the progress of an individual to attain certain goals. The levels of problem solving ability of students speak for the degree of their future success in life and hence in turn their contribution to the development of the society. Poor problem solving ability of the students is a matter of grave concern and challenges to education .There are many factors which are recognized to be affecting problem solving ability such as academic motivation, personality, Socio- economic status, school and home environment. Each and every student is provided equal opportunities like same curriculum, methods of teaching, examination system and physical facilities in spite of that problem solving ability of the students varies significantly. Some students excel in problem solving ability and other performs poorly. However, little research work has been done on the problem solving ability of senior secondary school students. This is particularly true in case of scheduled caste students. The academic motivation, self-efficacy and personality have a great impact upon the

problem solving ability of the students. So the need was felt by the investigator to make an attempt to systematic probe into problem solving ability of scheduled caste students of District Kullu and Mandi of Himachal Pradesh. Further these characteristics have been studied in relation to academic motivation, self-efficacy and personality. Beside this it may provide new direction to educational planner and thinker to develop new strategies of education. This may yield fruitful results for scheduled caste students of the country at large and particularly those of Kullu and Mandi districts of Himachal Pradesh.

Statement of the Problem

Problem Solving Ability of Senior Secondary Scheduled caste Students in Relation To Academic Motivation, Self-Efficacy and Personality Types

Objectives of the Study

1. To compare Problem Solving Ability of high and low Academic Motivated scheduled caste senior secondary school students.
2. To study the differences in Problem Solving Ability of scheduled caste senior secondary school students having high and low levels of self –Efficacy.
3. To find out the differences in Problem Solving Ability of extrovert and introvert scheduled caste senior secondary school students.
4. To study the interaction effect of Academic Motivation and Self-Efficacy of scheduled caste senior secondary school students on problem solving ability.
5. To find out the interaction effect of Self-Efficacy and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
6. To study the interaction effect of Academic Motivation and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
7. To study the triple interaction effect of Academic Motivation, Self-Efficacy and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
8. To find out the Inter-correlation among the variables of Academic Motivation, Self-Efficacy, Personality and Problem Solving Ability of scheduled caste senior secondary school students.

Hypotheses of the Study

1. There will be significance differences in the Problem Solving Ability of high and low groups of academic motivation of the scheduled caste senior secondary school students.
2. There will be significant difference in Problem Solving Ability of scheduled caste senior secondary school students having high and low self –efficacy levels.
3. There will be no significant differences in Problem Solving Ability of extrovert and introvert scheduled caste senior secondary school students.
4. There will be no significant interaction effect of Academic Motivation and Self-Efficacy on the Problem Solving Ability of scheduled caste senior secondary school students.
5. There will be no significant interaction effect of Self-Efficacy and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
6. There will be no significant interaction effect of Academic Motivation and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
7. There will be no significant interaction effect of Academic Motivation, Self -Efficacy and Personality on Problem Solving Ability of scheduled caste senior secondary school students.
8. The inter-correlation among the variables of Academic Motivation, Self –Efficacy, Personality and Problem Solving Ability will be positive and significant.

Methodology and Procedure

In the present study descriptive survey method of research will be used.

Variable Structure

Problem Solving Ability will be dependent variable. Academic Motivation, Self-Efficacy and Personality will be independent variables.

Design of the Study

The design in the present study will be 2x2x2. factorial This design is usually employed for finding out the effects of two or more independent variables operating simultaneously on the dependent variable of Problem Solving Ability. The effect of these variables is studied both in terms of the variables taken singly as well as taken together in different combinations to find out the interaction effects. In the present study the problem

solving ability will be the dependent variable whereas the variables of Academic Motivation, Self-Efficacy and Personality will be independent variables.

In second part of the study inter variables correlation among the variables of Academic Motivation, Self-Efficacy, Personality and Problem Solving Ability will be determined.

Dimensions of the design

The dimensions of a factorial design refer to the number of factors and the number of levels with each factor. The descriptive method will be followed in the present study based on 2x2x2.factorial design. The factors of personality variable will be varied at two levels – extrovert and introvert. Academic motivation and Self-Efficacy are varied at two levels each high and low. The effect of the independent variables will be studied both in terms of variables taken singly as well as taken together in different combinations to find out their interaction effects on problem solving ability. Layout of the design is given below:

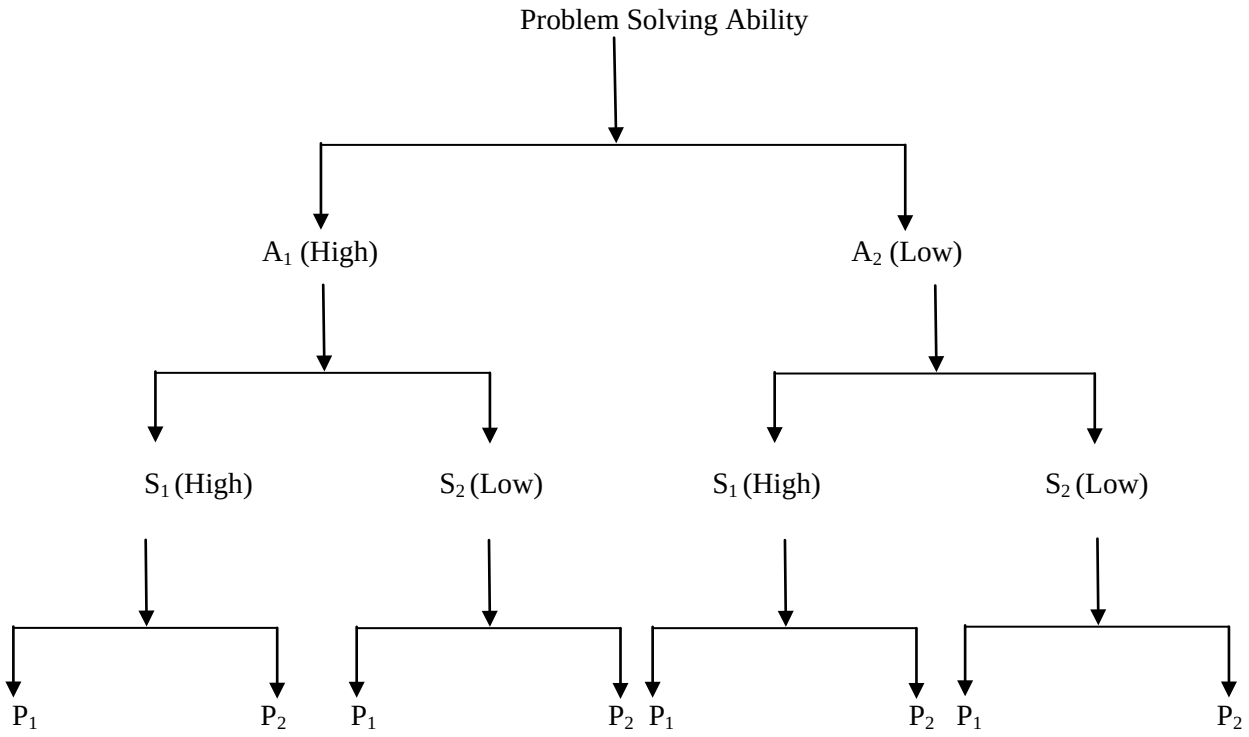

Figure: - 1

Population

In present study population consists of 11th class scheduled caste students of forty eight senior secondary schools of Kullu and Mandi districts.

Sample

In present study sample will be collected from four tehsils of Kullu and Mandi districts through random sampling. Sampling will be done as per the requirement of multistage sampling. In first stage six Govt. senior secondary schools will be selected randomly from one tehsil. Same process will be followed in other district. In this way total forty eight schools will be selected from both districts.

In second stage the academic motivation questionnaire will be administered on the students.

In the third stage the test of self-efficacy will be administered on the students.

In the forth stage the Eysenck,s Personality inventory will be administered on the students.

Research Tools to be used

Keeping in view the objectives of the study following tools will be used in present study for collecting data:

1. Problem Solving Ability test Hindi version by L.N.Dubey (2011)

2. Eyneck,s Maudsley Personality inventory Hindi version developed by S.Jalota and S.D. Kapoor.(1975)

3. Self-Efficacy scale by Hindi version by G.P.Mathur.(2012)

4. Academic Motivation Questionnaire Hindi version by Dr. J.P. Shrivastva. (1974)

Reliability and Validity will be calculated by the investigator to know the acceptability of test in present scenario before the collection of data.

Statistical Analysis

In present study data will be analysed by using given statistical techniques such as F-ratio, t-ratio and Pearson's r.

Operational definition of key terms used

The terms used in the present study having different connotations may be operationally defined as under:

Personality: collection of personality traits which are thought to occur together consistently, especially as determined by a certain pattern of responses to Eysench,s personality inventory.

Academic Motivation: It is the motivation towards school i.e. an urge to excel in the academic field as measured by Academic Motivation inventory by Srivastva .

Self –efficacy: Self-efficacy is the measure of the belief of students in their own ability to complete tasks and reach goals.

Problem solving: The operations can be a gauge of an individual's critical thinking, skill process of working through details of a problem to reach a solution. Problem solving may include mathematical or systematic.

Delimitation of Study

1. The study will be restricted to 48 senior secondary schools of Distt. Kullu and Mandi affiliated to H.P.Board of School Education Dharmshala.

2 .The study will be restricted to six hundred scheduled cast 11^{th} class senior secondary school students of kullu and Mandi district.

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